Applicant: Murphy, et al.

Attorney's Docket No.: 09010-004005

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Amendment to the Claims:

Please amend the claims as follows:

This listing of claims will replace all prior versions, and listing, of claims in the application:

<u>Listing of Claims:</u>

Claim 1 to 92 (canceled)

Claim 93 (currently amended): An isolated or recombinant [[A purified]] polypeptide having at least about 50% sequence identity [[homology]] to a polypeptide having a sequence as set forth in SEQ ID NO:4 as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having  $\alpha$ -galactosidase activity.

Claim 94 (currently amended): The <u>isolated or recombinant</u> [[purified]] polypeptide <u>of claim 93</u>, wherein the [[having about 50%]] sequence <u>identity is homology to a polypeptide having a sequence as set forth in SEQ ID NO:4 as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having α galactosidase activity.</u>

Claim 95 (currently amended): The <u>isolated or recombinant</u> [[purified]] polypeptide of claim 93 having at least <u>about</u> 55% sequence <u>identity</u> [[homology]] to a polypeptide having a sequence as set forth in SEQ ID NO:4 as <u>determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having  $\alpha$  galactosidase activity.</u>

Claim 96 (currently amended): The <u>isolated or recombinant</u> [[purified]] polypeptide of claim 95 [[93]] having at least <u>about</u> 60% sequence <u>identity</u> [[homology]] to a polypeptide having a sequence as set forth in SEQ ID NO:4 as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having  $\alpha$ -galactosidase activity.

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Claim 97 (currently amended): The <u>isolated or recombinant</u> [[purified]] polypeptide of claim 96 [[93]] having at least <u>about</u> 65% sequence <u>identity</u> [[homology]] to a polypeptide having a sequence as set forth in SEQ ID NO:4 as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having  $\alpha$ -galactosidase activity.

Claim 98 (currently amended): The <u>isolated or recombinant</u> [[purified]] polypeptide of claim <u>97</u> [[93]] having at least <u>about</u> 70% sequence <u>identity</u> [[homology]] to a polypeptide having a sequence as set forth in SEQ ID NO:4 as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having  $\alpha$ -galactosidase activity.

Claim 99 (currently amended): The <u>isolated or recombinant</u> [[purified]] polypeptide of claim <u>98</u> [[93]] having at least <u>about</u> 75% sequence <u>identity</u> [[homology]] to a polypeptide having a sequence as set forth in SEQ ID NO:4 as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having  $\alpha$ -galactosidase activity.

Claim 100 (currently amended): The <u>isolated or recombinant</u> [[purified]] polypeptide of claim <u>99</u> [[93]] having at least <u>about</u> 80% sequence <u>identity</u> [[homology]] to a polypeptide having a sequence as set forth in SEQ ID NO:4 as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having  $\alpha$ -galactosidase activity.

Claim 101 (currently amended): The <u>isolated or recombinant</u> [[purified]] polypeptide of claim 100 [[93]] having at least <u>about</u> 85% sequence <u>identity</u> [[homology]] to a polypeptide having a sequence as set forth in SEQ ID NO:4 as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having  $\alpha$ -galactosidase activity.

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Claim 102 (currently amended): The <u>isolated or recombinant</u> [[purified]] polypeptide of claim <u>101</u> [[93]] having at least <u>about</u> 90% sequence <u>identity</u> [[homology]] to a polypeptide having a sequence as set forth in SEQ ID NO:4 as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having α-galactosidase activity.

Claim 103 (currently amended): The <u>isolated or recombinant</u> [[purified]] polypeptide of claim 102 [[93]] having at least <u>about</u> 95% sequence <u>identity</u> [[homology]] to a polypeptide having a sequence as set forth in SEQ ID NO:4 as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having  $\alpha$ -galactosidase activity.

Claim 104 (currently amended): An isolated or recombinant [[A purified]] polypeptide having a sequence as set forth in SEQ ID NO:4.

Claim 105 (currently amended): An isolated or recombinant [[A purified]] polypeptide comprising at least 10 consecutive amino acids of the polypeptide of [[any one of claims]] claim 93 [[, 94, and]] or claim 104 and having α-galactosidase activity.

Claim 106 (currently amended): <u>The isolated or recombinant</u> [[A purified]] polypeptide of claim 105 comprising at least 15 consecutive amino acids of the polypeptide of any one of claims 93, 94, and 104 and having α-galactosidase activity.

Claim 107 (currently amended): <u>The isolated or recombinant</u> [[A purified]] polypeptide <u>of claim 106</u> comprising at least 20 consecutive amino acids of the polypeptide of <u>any one of claims 93, 94, and 104 and having α-galactosidase activity</u>.

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Claim 108 (currently amended): The isolated or recombinant [[A purified]] polypeptide of claim 107 comprising at least 25 consecutive amino acids of the polypeptide of any one of claims 93, 94, and 104 and having a galactosidase activity.

Claim 109 (currently amended): The isolated or recombinant [[A purified]] polypeptide of claim 108 comprising at least 30 consecutive amino acids of the polypeptide of any one of claims 93, 94, and 104 and having α galactosidase activity.

Claim 110 (currently amended): <u>The isolated or recombinant</u> [[A purified]] polypeptide <u>of claim 109</u> comprising at least 35 consecutive amino acids of the polypeptide of any one of claims 93, 94, and 104 and having α galactosidase activity.

Claim 111 (currently amended): <u>The isolated or recombinant</u> [[A purified]] polypeptide <u>of claim 110</u> comprising at least 40 consecutive amino acids of the polypeptide of <u>any one of claims 93, 94, and 104 and having α galactosidase activity</u>.

Claim 112 (currently amended): <u>The isolated or recombinant</u> [[A purified]] polypeptide <u>of claim 111</u> comprising at least 50 consecutive amino acids of the polypeptide of <u>any one of claims 93, 94, and 104 and having α galactosidase activity</u>.

Claim 113 (currently amended): <u>The isolated or recombinant</u> [[A purified]] polypeptide <u>of claim 112</u> comprising at least 55 consecutive amino acids of the polypeptide of <u>any one of claims 93, 94, and 104 and having α galactosidase activity</u>.

Claim 114 (currently amended): <u>The isolated or recombinant</u> [[A purified]] polypeptide of claim 113 comprising at least 100 consecutive amino acids of the polypeptide of any one of claims 93, 94, and 104 and having α galactosidase activity.

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Claim 115 (currently amended): <u>The isolated or recombinant</u> [[A purified]] polypeptide of claim 114 comprising at least 150 consecutive amino acids of the polypeptide of any one of claims 93, 94, and 104 and having α galactosidase activity.

Claim 116 (currently amended): <u>An isolated or recombinant</u> [[A purified]] polypeptide encoded by a sequence as set forth in SEQ ID NO:3, or variants thereof, having at least <u>about</u> 50% sequence identity to SEQ ID NO:3, wherein the polypeptide has α-galactosidase activity <u>and is able to renature and regain activity after exposure to temperatures of about 60 degrees C to about 105 degrees C.</u>

Claim 117 (currently amended): An isolated or recombinant [[A purified]] polypeptide encoded by a sequence as set forth in SEQ ID NO:3, or variants thereof, having at least about 50% sequence identity to SEQ ID NO:3, wherein the polypeptide catalyzes the enzymatic hydrolysis of saccharides.

Claim 118 (currently amended): An enzyme preparation comprising the polypeptide of claim 93 or claim 105 [[94 which is]] and a liquid.

Claim 119 (currently amended): A dry [[An]] enzyme preparation comprising the polypeptide of claim 93 or claim 105 [[94 which is dry]].

Claim 120 (new): The isolated or recombinant polypeptide of claim 116, wherein the α-galactosidase activity comprises the ability to renature and regain activity after exposure to temperatures of about 60°C to about 105°C.

Claim 121 (new): The isolated or recombinant of claim 116, wherein the polypeptide is encoded by a sequence having at least <u>about</u> 55% sequence identity to SEQ ID NO:3.

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Claim 122 (new): The isolated or recombinant of claim 116, wherein the polypeptide is encoded by a sequence having at least about 60% sequence identity to SEQ ID NO:3.

Claim 123 (new): The isolated or recombinant of claim 116, wherein the polypeptide is encoded by a sequence having at least about 65% sequence identity to SEQ ID NO:3.

Claim 124 (new): The isolated or recombinant of claim 116, wherein the polypeptide is encoded by a sequence having at least about 70% sequence identity to SEQ ID NO:3.

Claim 125 (new): The isolated or recombinant of claim 116, wherein the polypeptide is encoded by a sequence having at least about 75% sequence identity to SEQ ID NO:3.

Claim 126 (new): The isolated or recombinant of claim 116, wherein the polypeptide is encoded by a sequence having at least about 80% sequence identity to SEQ ID NO:3.

Claim 127 (new): The isolated or recombinant of claim 116, wherein the polypeptide is encoded by a sequence having at least about 85% sequence identity to SEQ ID NO:3.

Claim 128 (new): The isolated or recombinant of claim 116, wherein the polypeptide is encoded by a sequence having at least about 95% sequence identity to SEQ ID NO:3.

Claim 129 (new): An isolated or recombinant polypeptide having a sequence as set forth in SEQ ID NO:4 comprising at least one conservative amino acid substitution, wherein

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the conservative amino acid substitution comprises substituting one hydrophobic amino acid for another or substituting one polar amino acid for another.

Claim 130 (new): The isolated or recombinant of claim 129, wherein arginine is substituted for lysine or glutamic acid is substituted for asparagine.

Claim 131 (new): The isolated or recombinant of claim 93 or claim 105, wherein the polypeptide is associated with a polyethylene glycol.

Claim 132 (new): An isolated or recombinant polypeptide comprising an active fragment of the polypeptide of claim 93 or claim 104.

Claim 133 (new): A method of making a polypeptide having  $\alpha$ -galactosidase activity comprising the following steps:

- (a) providing an  $\alpha$ -galactosidase-encoding nucleic acid, wherein the nucleic acid encodes an  $\alpha$ -galactosidase having a sequence as set forth in claim 93; and,
- (b) expressing the nucleic acid, thereby generating a polypeptide having  $\alpha$ -galactosidase activity.

Claim 134 (new): The method of claim 133, wherein the nucleic acid is inserted into a host cell and the polypeptide having  $\alpha$ -galactosidase activity is expressed in the cell.

Claim 135 (new): The method of claim 134, wherein the cell is a prokaryotic cell or a eukaryotic cell.

Claim 136 (new): The method of claim 133, wherein the nucleic acid is operatively linked to a promoter.

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Claim 137 (new): The method of claim 136, wherein the nucleic acid further comprises a vector.